

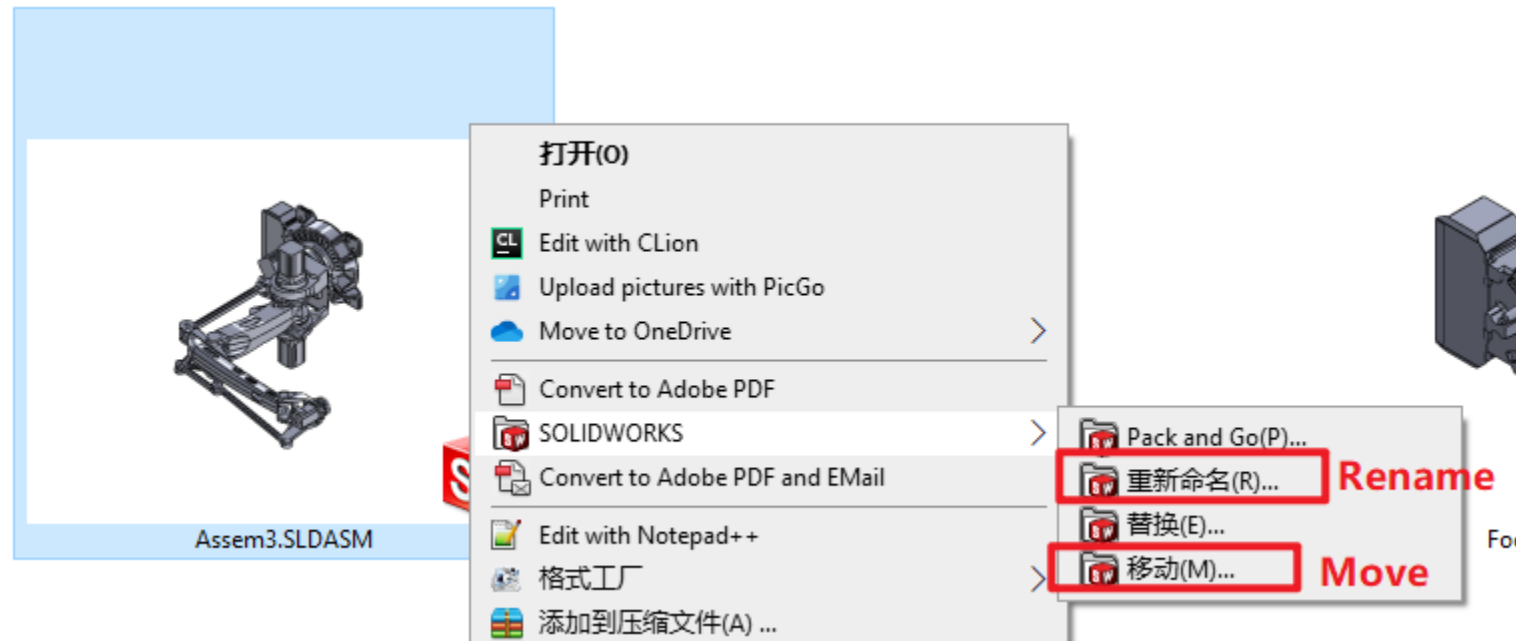
# Tips When Doing CAD Collaboration

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# Change File Name or Move the File

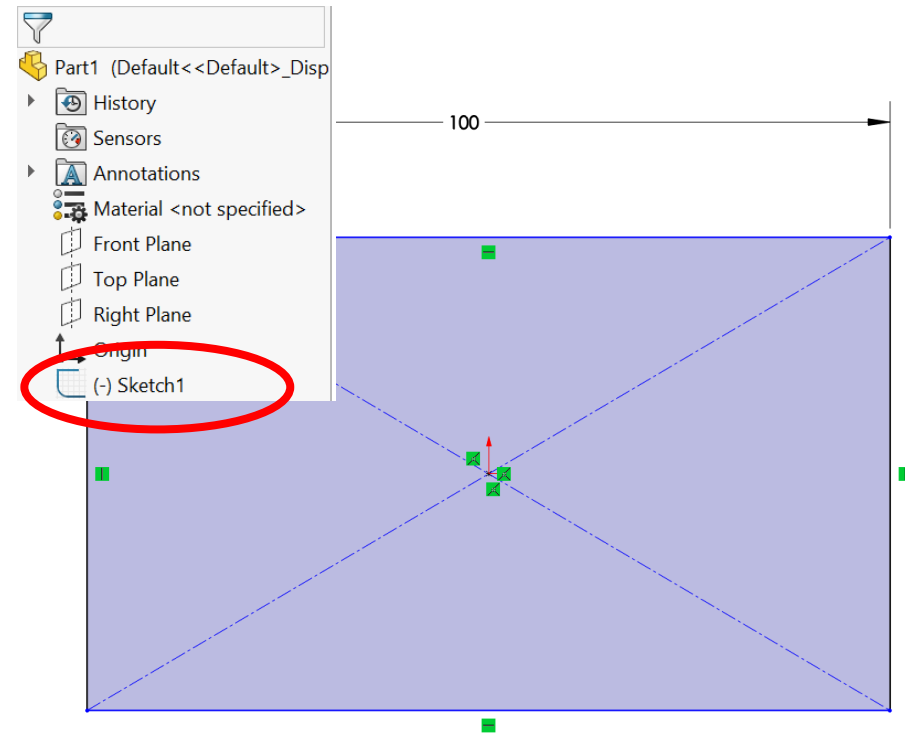
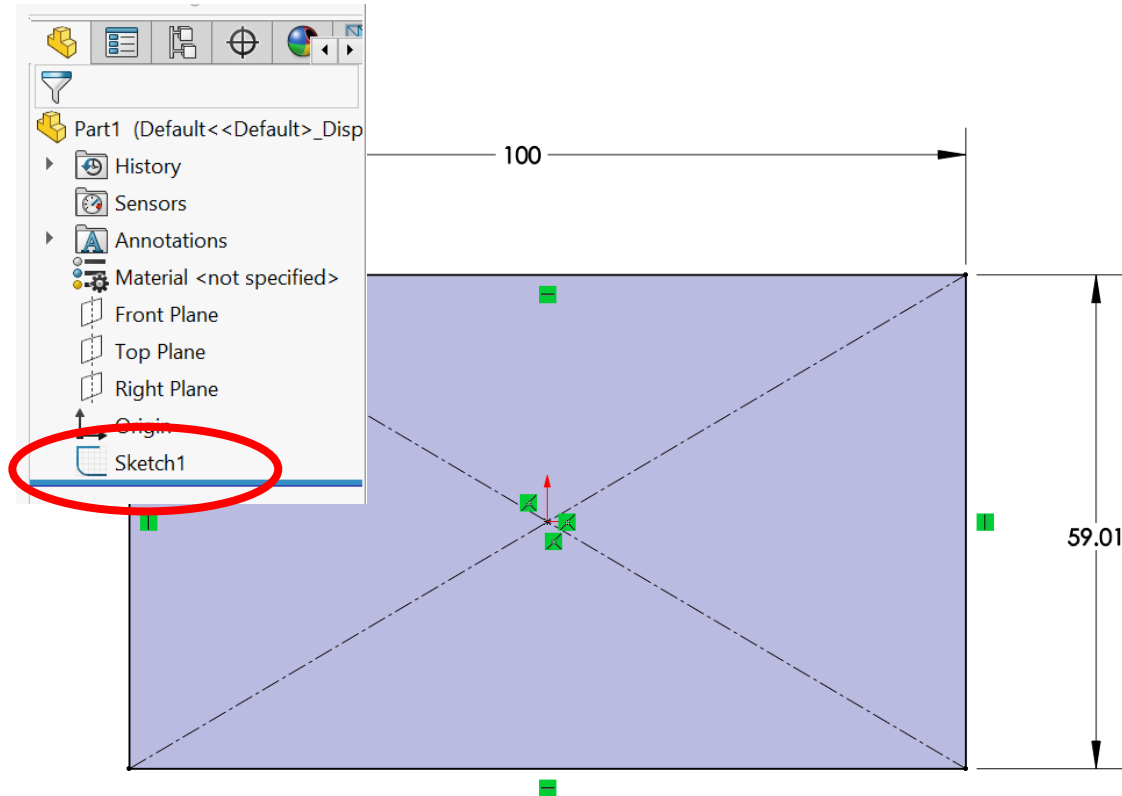
Do it in this way, otherwise you will **lose the reference/connection** with other files.



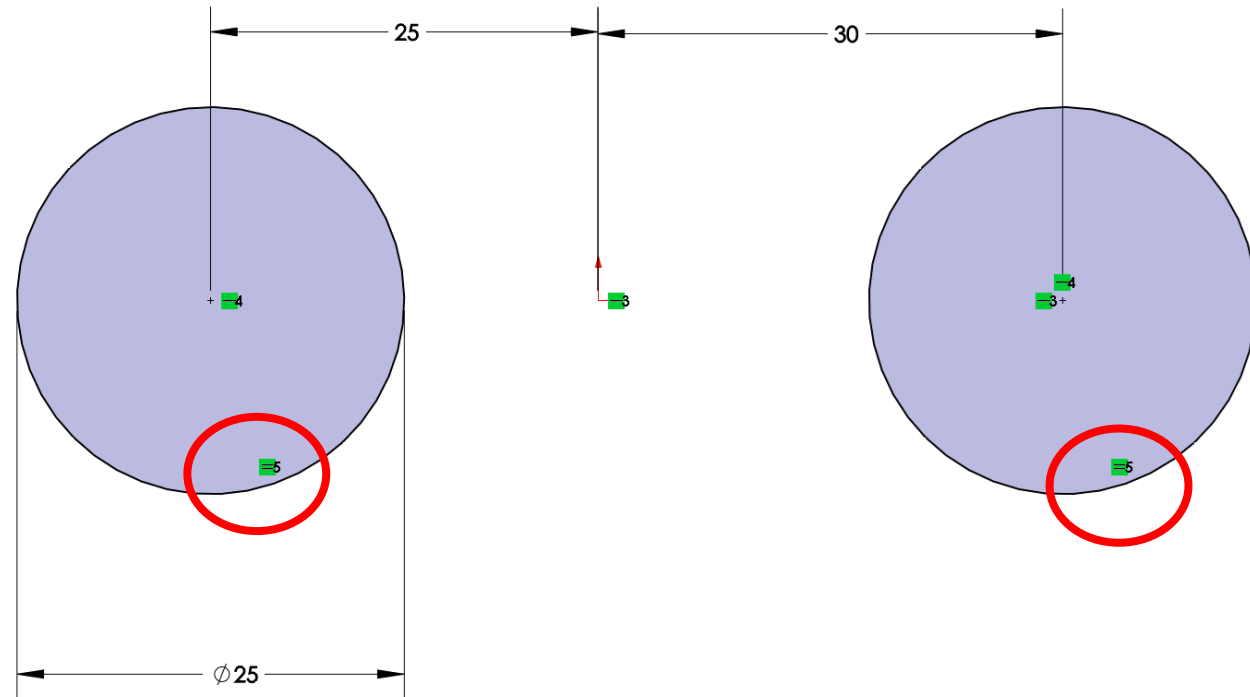
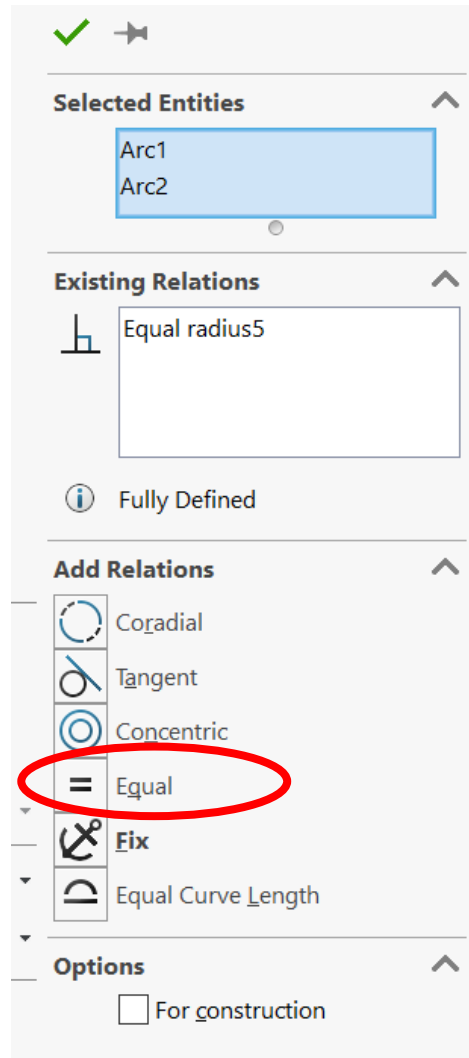
# Sketches

- Fully define sketches. All **BLACK**, no **BLUE**.
  - DO NOT use “Fully Define Sketch” button
- Use equations, relations, and general variables
  - Use relation definitions (for example, “=”), or define variables
- Dimension rectangles from the edges, not the corner
- Make separate features in separate sketch unless it's master sketch from top-down
- Use symmetrical relations
- Put origin at a mounting location (or center point)
- Use construction lines to help define sketch (less unnecessary trim)
- 3D Sketch - 2D first then having 3D sketch come off of that

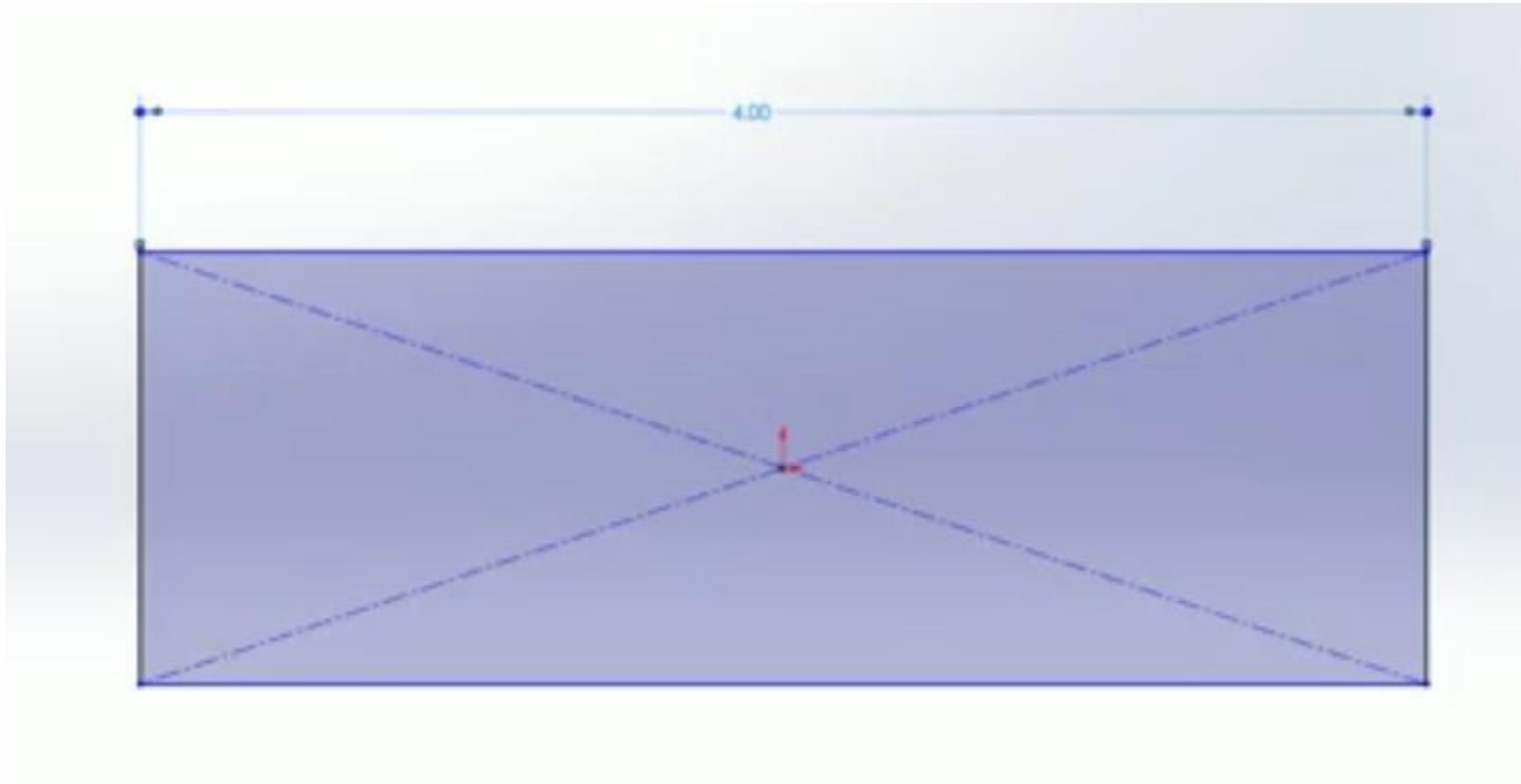
# Sketch - Fully Define Sketches



# Sketch - Combine Common Dimensions

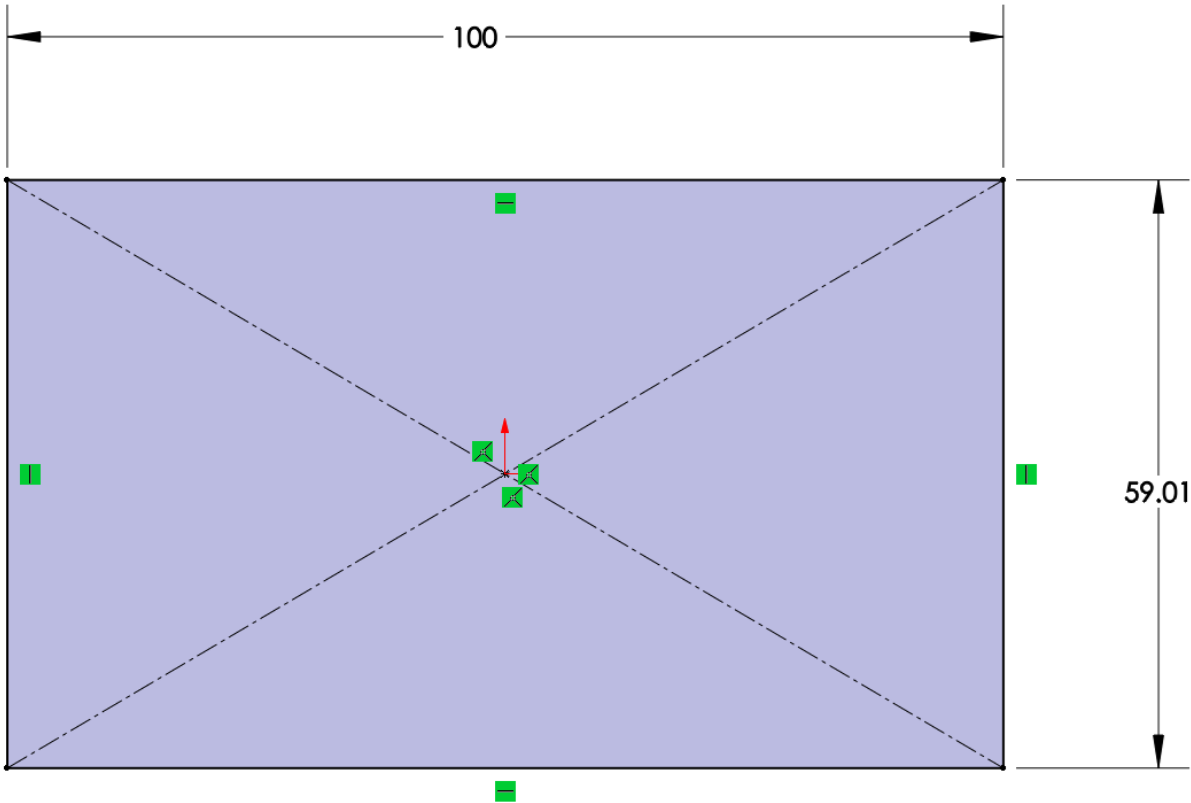


# Sketch - Dimensioning Rectangles



# Use Construction Lines

**Also:**  
**-Symmetrical Relation**  
**-Origin**

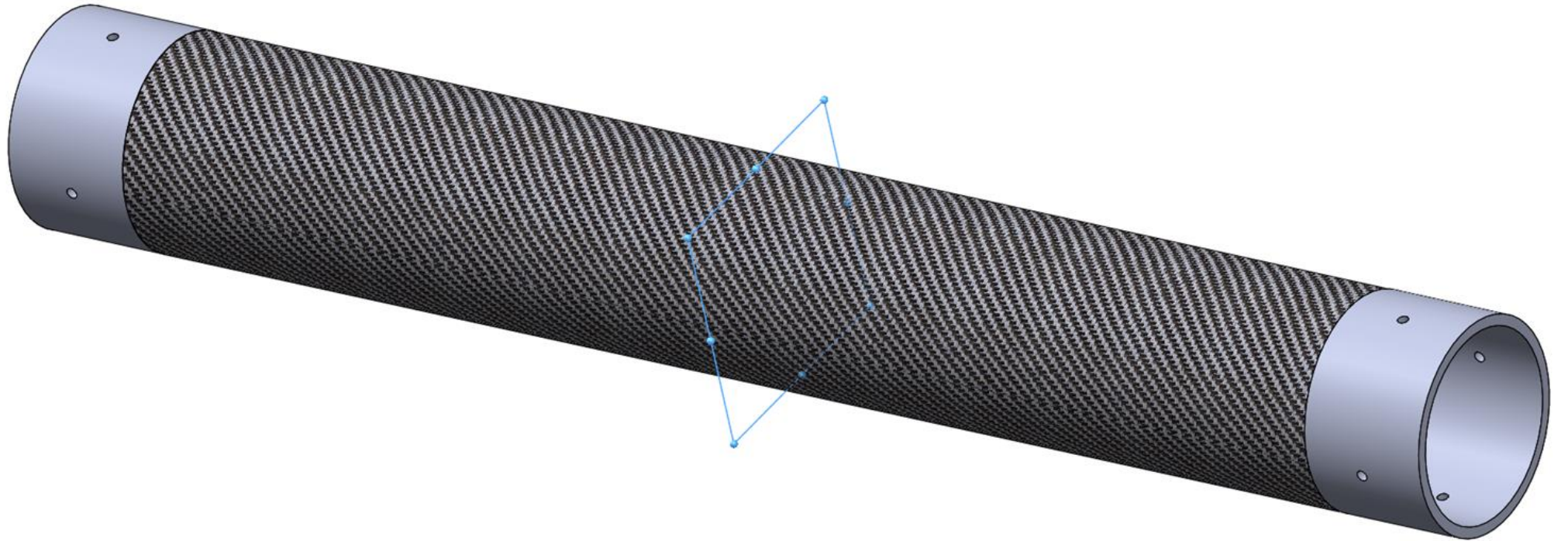


# Parts

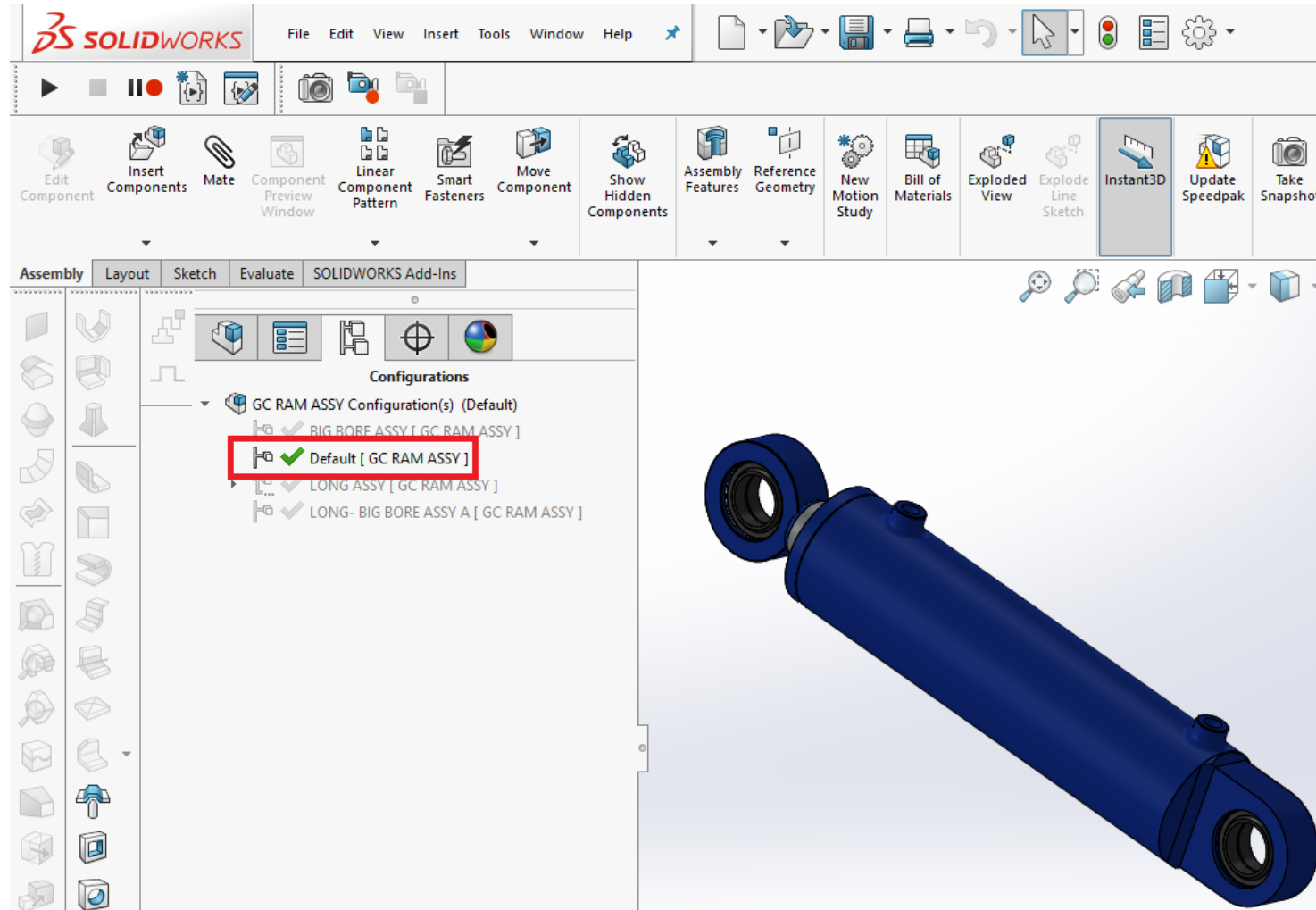
- Use symmetry whenever possible
- Use configuration when possible
- Make features like when it's being machined
- Name useful dimensions and features
  - Especially when those dimensions are referenced
- Make several simple features instead of one complicated feature. (More robust and easy to edit)
- Use fillet features instead of sketch fillets
- Apply cosmetic fillet and chamfer last



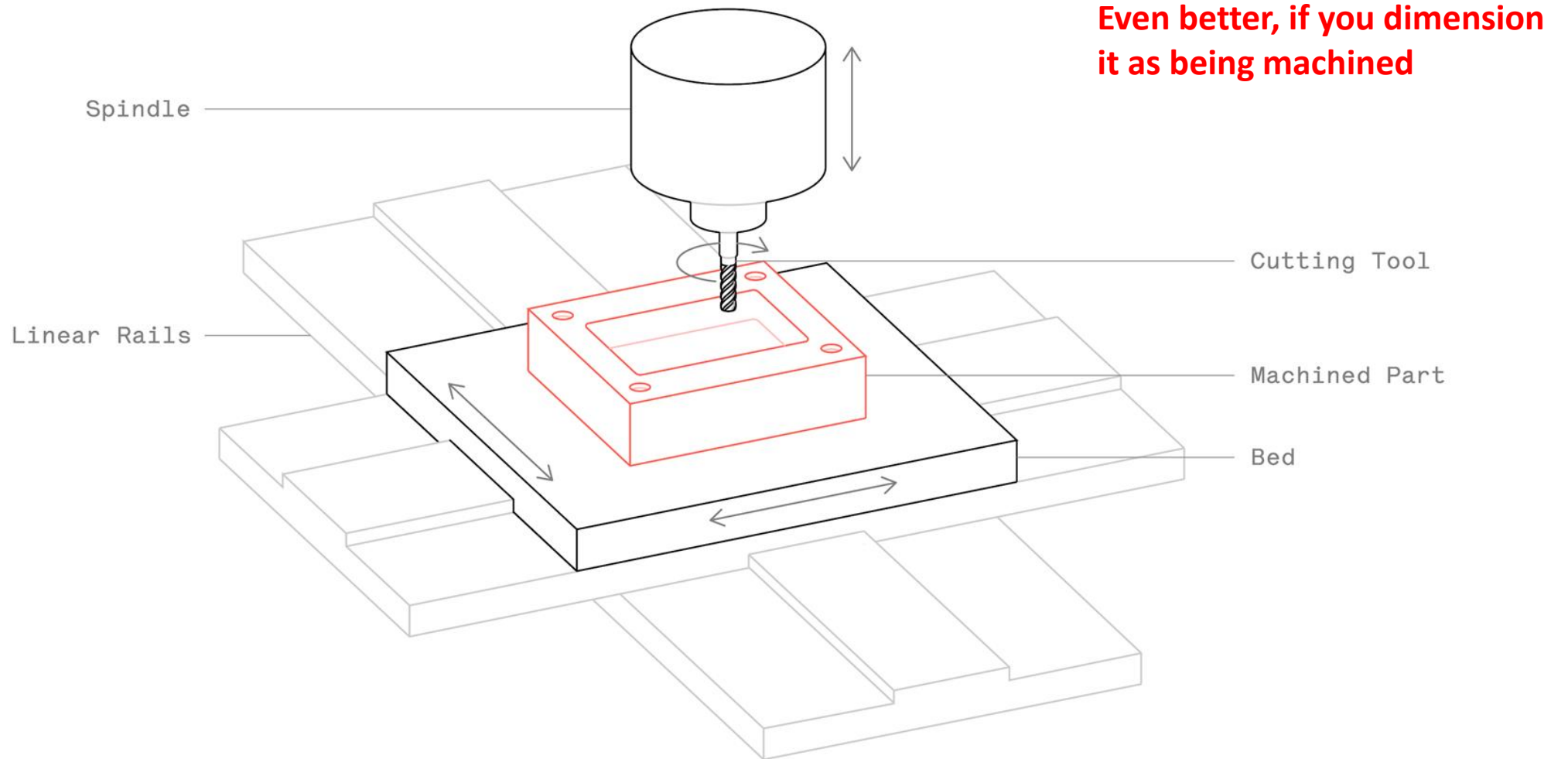
# Use Symmetrical Relations



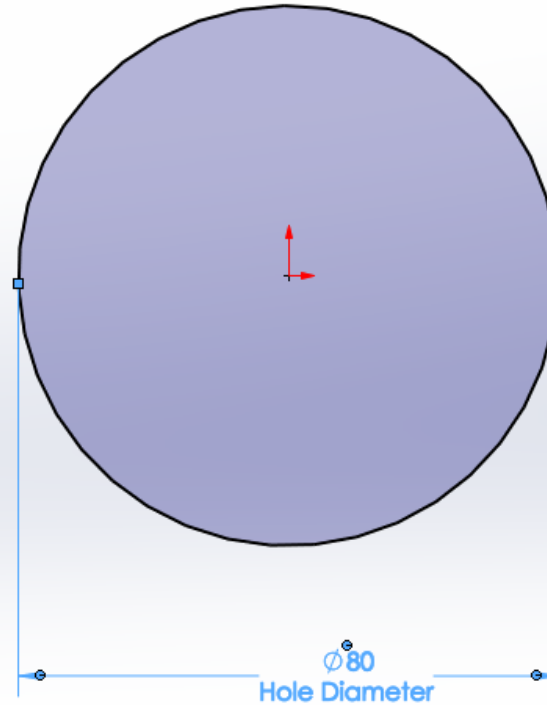
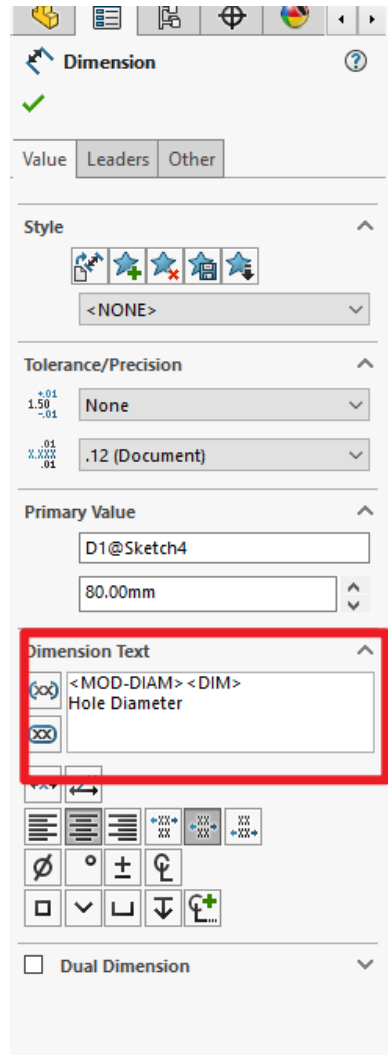
# Use Configuration



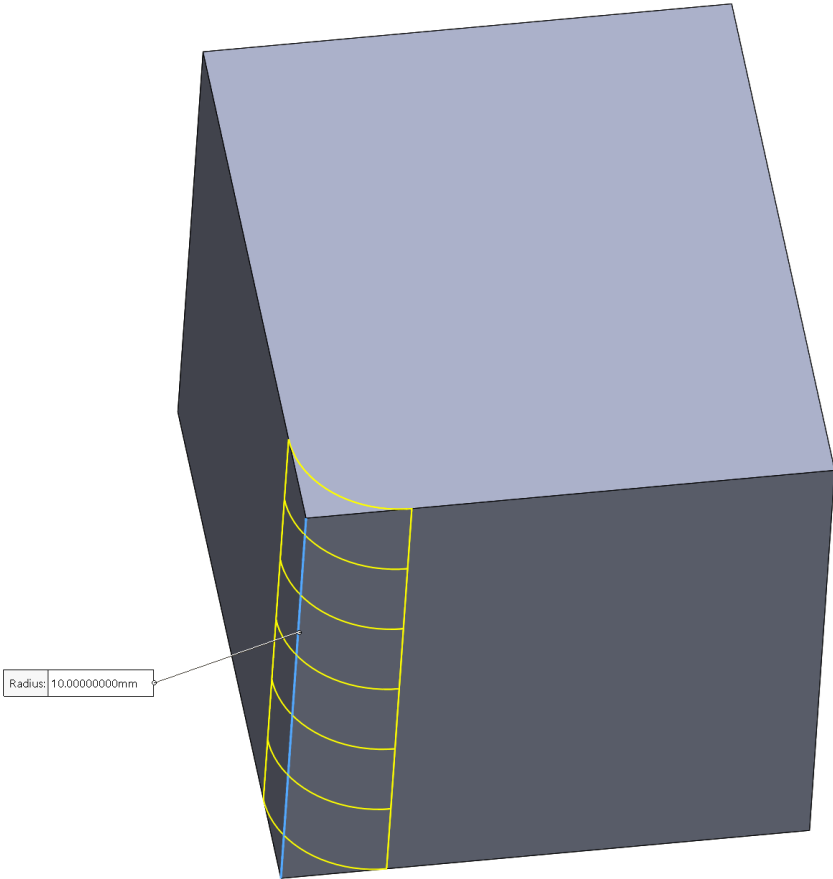
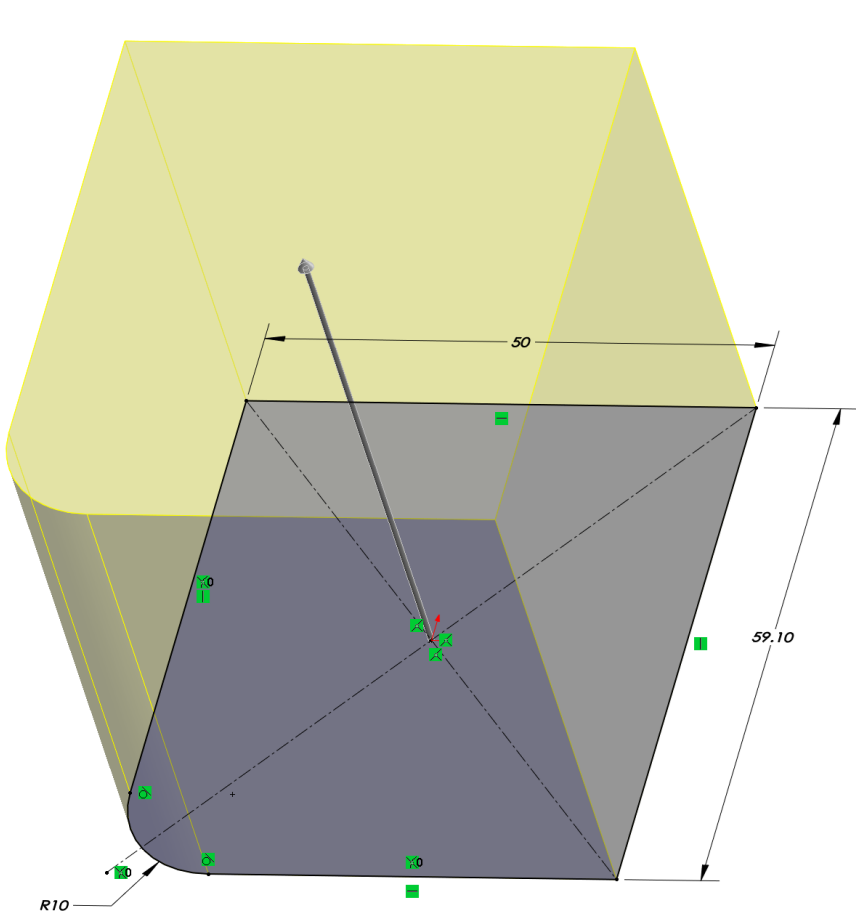
# Make features Like Being Machined (not necessary for you now)



# Label Important Dimensions



# Fillet in Feature Not Sketch if Possible



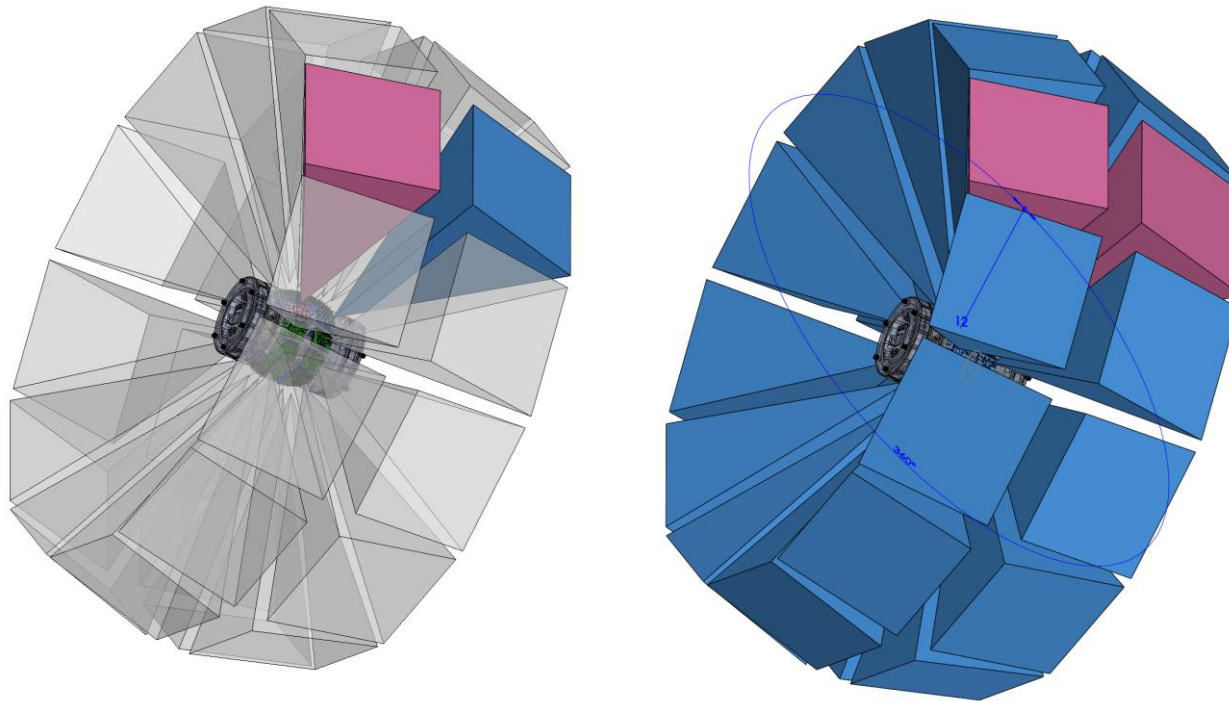
# Use Component Patterns

In addition, use the magic combo:

hole wizard

+

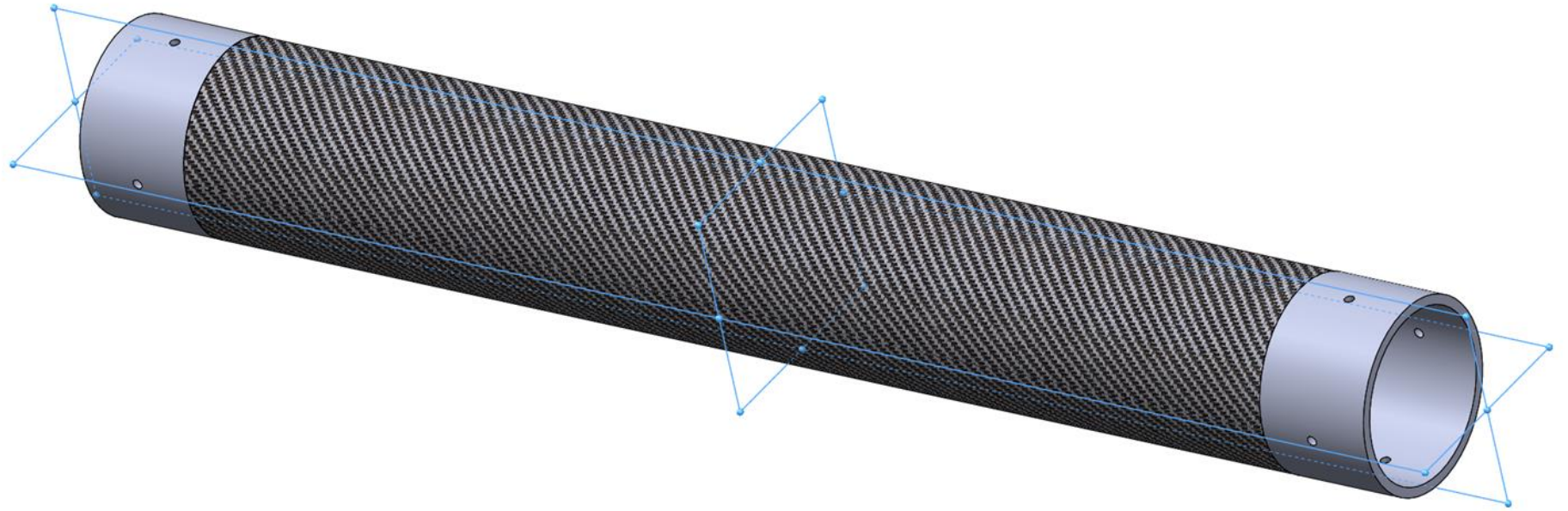
Pattern driven component pattern



# Assembly

- Origin plane mates (especially first part)
- If possible, mate all components to one or two fixed references
  - Long chains of components take longer to solve and more likely to get errors.
  - Do not create loops for mates
- Fully define the position of each part in assembly, unless visualization of motion needed for certain parts
  - Option: use mechanical mates
- Patterns, not multiple same parts if possible (greatly reduce computing power needed)
- Lock rotation on cylindrical mate if you don't need rotation

Put Origin as Mount Location





Small trick for assembling: Copy with mates

<https://www.bilibili.com/video/BV1hK4y1x7fu>

# Reference

- [http://help.solidworks.com/2018/English/SolidWorks/sldworks/c\\_Best\\_Practices\\_for\\_Mates\\_SWassy.htm?verRedirect=1](http://help.solidworks.com/2018/English/SolidWorks/sldworks/c_Best_Practices_for_Mates_SWassy.htm?verRedirect=1)
- <https://blog.alignex.com/10-large-assembly-best-practices-in-solidworks>
- <https://forum.solidworks.com/thread/183132>
- <https://petercad.com/category/solidworks-best-practices/>
- <https://www.solidsolutions.co.uk/solidworks/tutorial-videos/top-down-modelling-best-practice.aspx>